Incorporating Webcams into Forecast Operations

Steven B. Taylor

NOAA/National Weather Service
Forecast Office Charleston SC

steven.taylor@noaa.gov
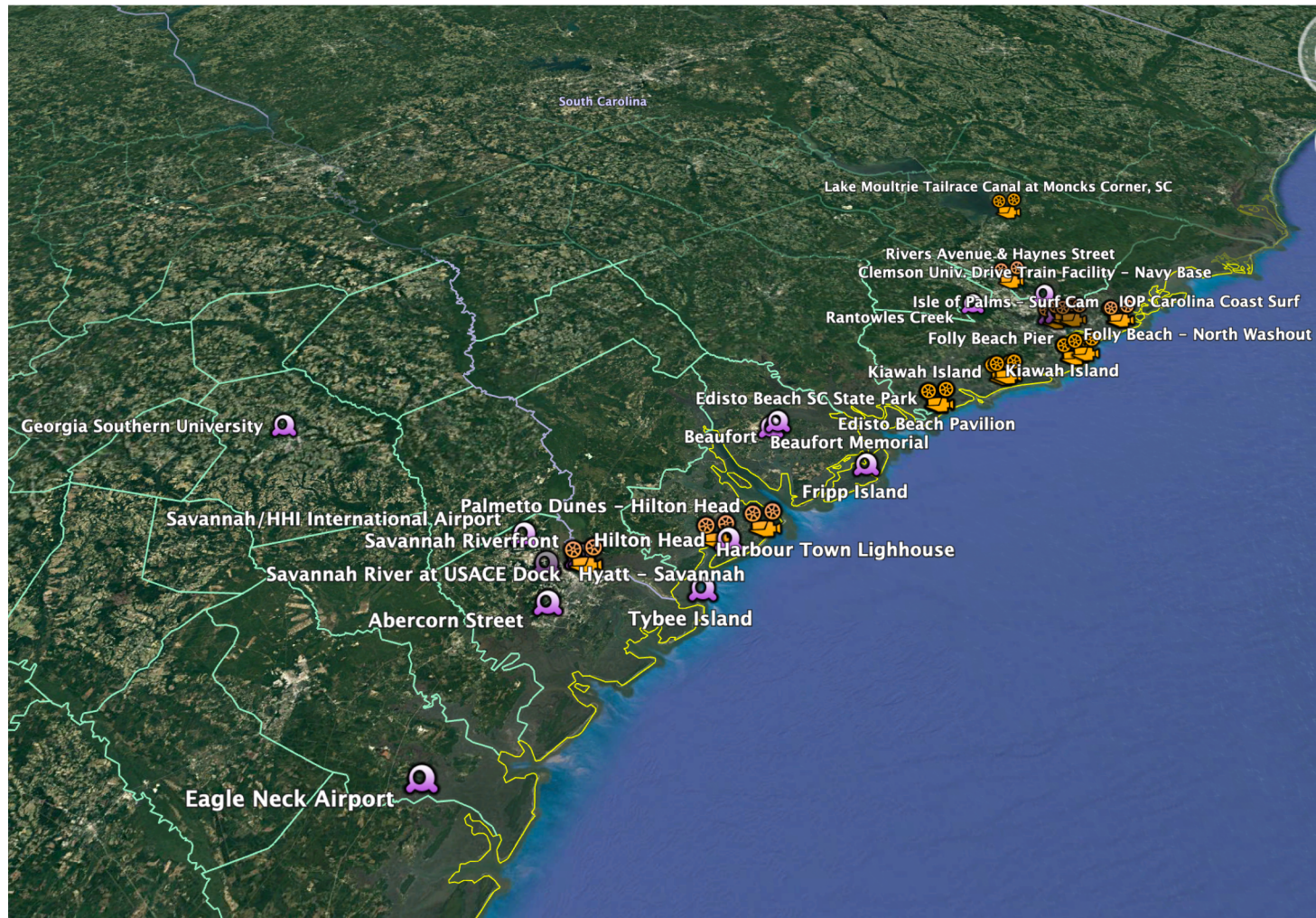
November 14 - 15, 2018   Charleston, SC

Application

- Webcams are critical to operations and have been incorporated into the forecast process.

- NWS Forecasters utilize coastal webcams to:
  - Observe current marine and surf zone conditions
    - Cloud cover, current weather, wave conditions, crowd levels; aids rip current forecasting
  - Augment for lack of satellite, radar and surface observations, both spatially and temporally.
    - 1 min satellite from GOES-E, 5 min ASOS data, and 1-2 min radar data (SAILS/AVSET modes) still do not show the entire operational picture.
    - Webcams help forecasters "fill the gap."
  - Verify radar trends.
    - Example: Observe shelf cloud, winds likely >35 kt. Critical to mariners.
  - Warning verification
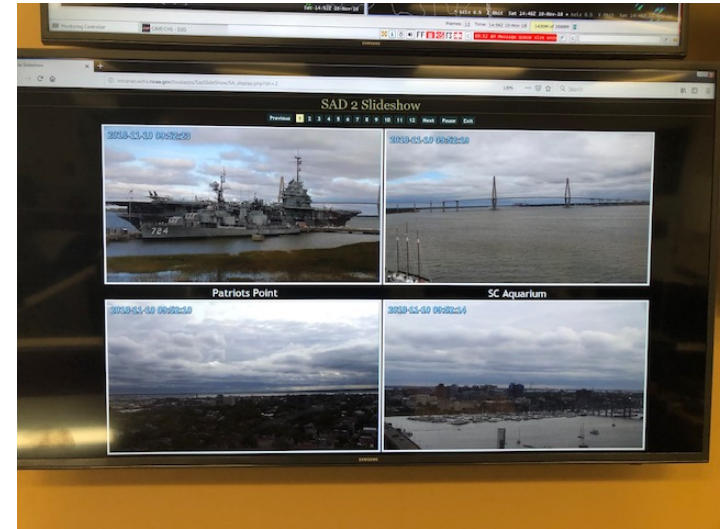   - Waterspouts, hail, high winds, wind damage.

Application

- Can aid Decision Support Services (DSS)
  - Smoke management along the coast
    - Dense Smoke Advisories for land and water
    - Controlled burns
  - Various coastal activities
    - Charleston Bridge Run
    - Open water events
  - Savannah and Charleston Harbor port operations
    - Sea fog, dense smoke
- Data incorporated into WFO operations area via Situational Awareness Displays (SAD).

Web Camera Locations Across Southeast SC and Southeast GA

www.secoora.org/webcat

Situational Awareness Display (SAD)

- Locally written program grabs static images from area webcams and incorporates images into SAD for viewing by all personnel in operations.
- Local software also takes static images and creates loops for use on the SAD.
  - Use of loops increase situational awareness and gives forecasters better looks at current coastal trends (lowering visibilities, increasing swell, etc)
- Images archived for post-event analysis

www.secoora.org/webcat

Situational Awareness Display (SAD)

12:02 PM, Thu, May 29

www.secoora.org/webcat

Challenges and Roadblocks

- Webcams are constantly changing; difficult to maintain URLs.

- DOC/NOAA/NWS security protocols can sometimes prevent proper viewing or completely block access.

- Some websites block users who access cams too frequently.

  - SADs constantly pinging websites.

  - If blocked, we typically have to email to regain access.

Shelf Cloud: Buoy 41004 Webcam

National Data Buoy Center Station ID: 41004   07/19/2017 2310 UTC

DSS: Charleston Bridge Run Charleston Harbor

Camera 69 - Sat 3/31/2012 9:16:57 AM
SCDOT
CAM 69 US17S MT. PLSNT

www.secoora.org/webcat

Sea Fog: Folly Beach, SC

Hurricane Leslie Swell Train: Folly Beach, SC

Dense Smoke: Charleston Harbor, SC

Thunderstorm Shelf Cloud: Charleston Harbor, SC

James Island Yacht Club

Coastal Flooding: Skidaway Island, GA

Skidaway Institute of Oceanography

Hurricane Surge: Downtown Charleston, SC

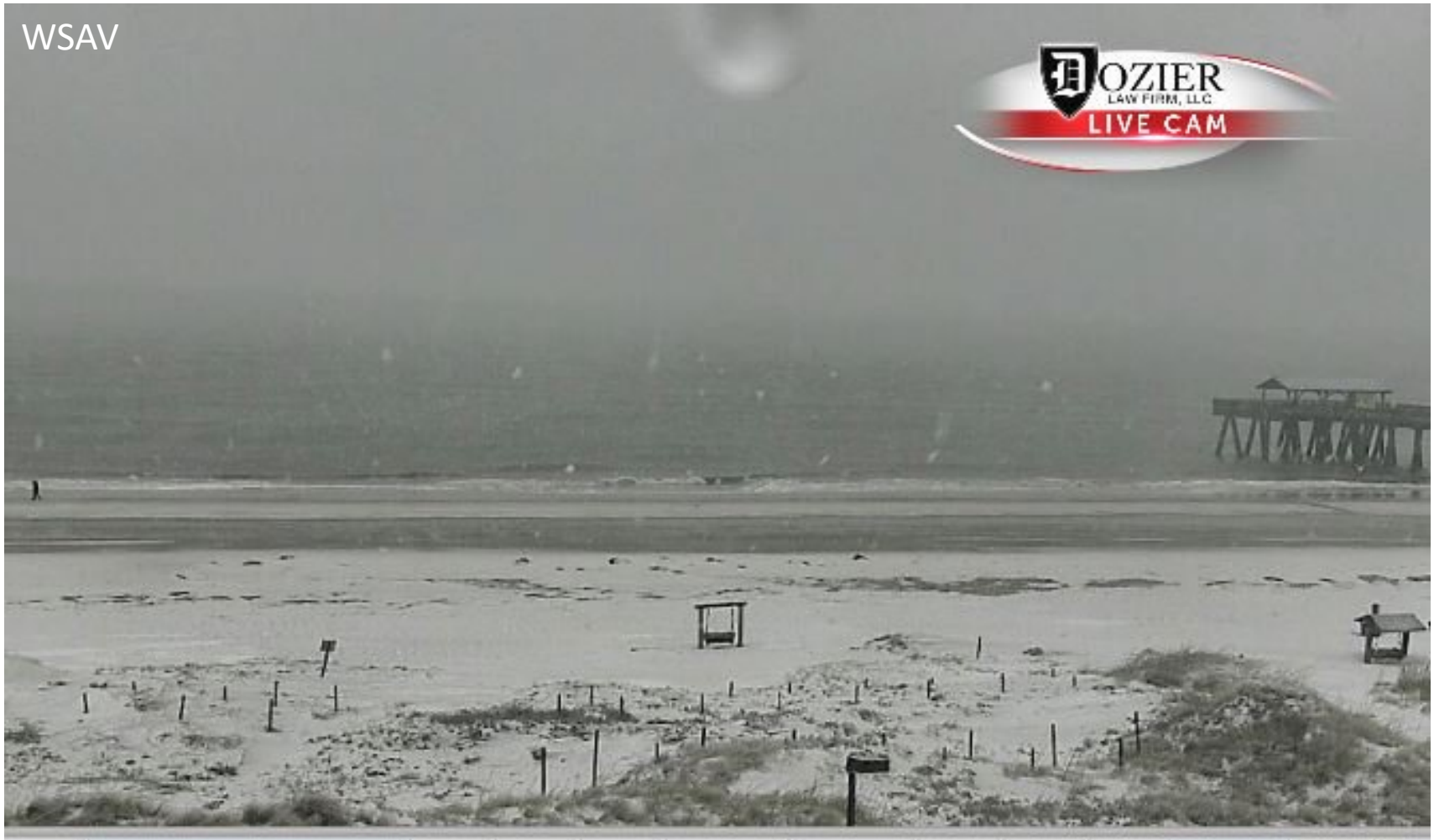# Thunderstorm Structure over Atlantic

WCSC

www.secoora.org/webcat

Coastal Flooding: Tybee Island, GA

SavannahCams

SECOORA
Southeast Coastal Ocean Observing
Regional Association

IOOS
Integrated Ocean
Observing System

www.secoora.org/webcat

Thunderstorm Shelf Cloud: Tybee Island, GA

SAVANNAH CAMS

Snow: Tybee Island, GA

Waterspout: Juno Pier, FL

Surfline

SECOORA
Southeast Coastal Ocean Observing
Regional Association

IOOS
Integrated Ocean
Observing System

www.secoora.org/webcat

Waterspout: Ship Bottom, NJ

Surfline